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ABSTRACT

This paper examines the degree to which high-school course offerings are unequally distributed across schools, paying attention to relationships between school size and the incidence of new course titles in various curriculum areas. The inquiry is based on the presumption that economies of scale play a role in educational opportunity. The study is based on data from 1,015 New York high schools responding for the "High School and Beyond" surveys. It asks how economies of scale manifest themselves in curricular offerings, differentiating between academic and vocational offerings and among high schools across urban, suburban, and rural settings. The data reveal a strong positive relationship between school size and the available number of unduplicated full-year courses and credit offerings. Among like-sized high schools, those considering themselves "rural" offer fewer unduplicated full-year courses. Rural schools, however, offer a comparable or larger number of part-year courses than their like-sized counterparts. The results suggest that large-school students benefit disproportionally in the foreign language and arts portions of the curriculum. Rural schools offer fewer different courses compared to similarly sized nonrural schools. As school size increases, the number of basic courses grows at a rate slower than the number of both remedial and advanced courses. The findings show that both school size and rurality have consequences for educational opportunity and that these consequences are distributed unequally across areas of the curriculum. The document concludes by raising a wide range of educational-equity and research issues. (TES)

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High School Size and Course Offerings:

Evidence from High School and Beyond

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Section I: Introduction

In this paper we examine course offerings of the American high school. We report on the degree to which these offerings are unequally distributed across schools and pay explicit attention to relationships between the size of a school and the incidence of new course titles in various areas of its curriculum.

The study builds on earlier examinations based on data drawn from New York State High Schools (Monk and Haller, 1986; Monk, 1987). Here the dat are drawn from a national sample of high schools and permit an assessment of how well the New York results generalize. In addition, because the data bases differ, new analyses are possible using the national data.

The study also builds on an earlier effort to discern relationships between high school size and programmatic offerings (Haller, Monk, Spotted-Bear, Griffith, and Moss, 1990). Our approach begins with general counts of curricular offerings and proceeds by drawing distinctions among ever more narrow areas within the high school curriculum. In addition, we differentiate between types of high schools and pay attention to differences across urban, suburban, and rural settings. We are interested in the degree to which these schools' curricular offerings differ when controls are in place for differences in size.

Section II: Background and Conceptual Base

This inquiry is based on the presumption that economies of scale play a role in the production of educational outcomes. Rather than estimate a unit cost curve, our approach is to ask to what degree and in what fashion do these

economies manifest themselves in the form of curricular offerings. This is a reasonable outcome to emphasize since administrative efforts to enlarge high schools and school districts are commonly based at least in part on the expectation that larger size leads to greater curricular depth and specialization. In this study we examine the degree to which this is the case as well as the areas in which gains appear.

There have been many studies of scale economies in education.[1] The traditional approach has been to estimate one or another version of a cost curve and to establish whether the unit cost curve has a U-shape. To the degree that a U-shape can be discerned, there is a size below which increases are associated with decreases in unit costs. Efficiency conscious administrators have sought to take advantage of these size related economies by increasing the size of small schooling units.

This thinking is flawed in several respects. In particular, it slides over the possibility that multiple educational outcomes exist, each with its own unit cost curve. To the degree that these cost curves do not coincide, there is considerable ambiguity regarding the optimal size of schools. An irony is that this ambiguity is likely even if each of the outcomes is associated with a U-shaped unit cost curve.

The traditional approach also slides over questions about the distribution of whatever costs are occasioned by size diseconomies. This is acceptable if policy makers have a means of eliminating accurately estimated extra costs. But in the case of scale diseconomies, this is not likely.

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[1] For a now somewhat dated review, see Fox (1981). For examples of more recent studies see Kenny (1982); Jimenez (1986); Riew (1986); and Cohn, Rhine, and Santos (1989).

Thus, to the degree that the additional costs are present, their disposition is important.

However, progress has been made within the traditional framework. Analysts are increasingly sensitive to the variety of products being produced within educational organizations. For example, in their recent study of scale economies in higher education, Cohn, Rhine, and Santos (1989) used a flexible fixed cost quadratic function to distinguish explicitly among ray economies of scale, product-specific economies of scale, and economies of scope. Their estimates of scope economies are of particular interest in this context since these deal with the degree to which the production of one outcome complements the production of other outcomes.

One of the things we know about the traditional approach is that the recommended sizes for schooling units are growing smaller (cf Hanson 1964; Cohn 1968; Walberg and Fowler 1987; and Friedkin and Necochea (1988). It appears that as analysts develop more refined and analyses, it becomes more difficult to demonstrate instances of clear cut size related economies over wide ranges of schooling unit sizes.

In this analysis, the focus is on the distribution of size related costs. We are most directly concerned with the degree to which students bear whatever costs small size entails in the form of reduced or otherwise inadequate curricular offerings. Our reasoning is that if size economies are real, they ought to manifest themselves in some form within the school's curricular offerings. If no size related effects can be discerned within a

school's curriculum, one of the classic rationales for reorganizing schools into larger administrative units is substantially undermined.[2]

Section III: Data and Method

All of the data for this study come from two files prepared for the High School and Beyond surveys, the "School File" and the "Course File." Properly weighted, the 1015 schools in the sample are representative of all public and private high schools in the U.S. in 1980, the survey's base year.

From the sampled schools we eliminated all private schools, all schools without a grade 12, and all specialized schools (those coded as vocational or intended specifically for the handicapped). This left us with a total of 683 public high schools. Some of these schools include only grades 10-12 while others begin at grade 7 or below. The smaller high schools in particular are more likely to include lower grades and in some cases offer an entire K-12 program.

We experimented with alternative restrictions on the sample since mixes of high schools serving different grade levels could distort our results, but we were reluctant to discard the cases these additional restrictions required. The sensitivity analyses we have conducted to date suggest that the results are not sensitive to how restricted the sample becomes. In cases where there

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[2] There are, of course, additional reasons that can be cited for increasing the size of schooling units. Scale economies may manifest themselves exclusively in the form of savings for taxpayers. If this is the case, an inability to demonstrate salutary effects of increased size on curricular offerings does not undermine the case for increasing school size. However, the absence of a salutary effect on the curricular surely weakens the case and invites questions about why size economies accrue exclusively for taxpayers.

are departures, we will comment on them, but the results reported below are based on the 683 school subsample. These sensitivity analyses are continuing.

As our measure of school size, we chose the number of students in each high school's graduating class in 1979. Our choice was dictated by our interest in the full range of courses offered including advanced courses that are intended for juniors and seniors. However, McKenzie's (1989) study of school size and curricular offerings in Australia indicates that the distribution of students across grade levels has an important bearing on curricular resource allocation. In future work, we will be more attentive to the effect of differences between enrollment in grade 10, grade 12, and the size of the graduating class. This will allow us to assess the impact of high dropout rates on the curricular offerings of high schools.

The graduating class size variable was divided into seven categories: (1) less than 25 graduates; (2) 25-49; (3) 50-99; (4) 100-199; (5) 200-299; (6) 300-399; and (7) 400 or more graduates. The unequal category sizes derive from our interest in the smallest schools and our desire to identify points at which plateaus exist.

The "Course" file provides course-level information about the offerings of individual schools within the survey. Among other things, this file provides a six-digit code for each unique course offered by a school. Thus, it provides an inventory of courses taught in secondary schools nationwide in that year. The documentation accompanying the file gives the most common title for each course, a list of alternative course titles that were assigned the same code, and a brief set of descriptors suggesting the course's contents. The first two digits of the code come from the Classification of Instructional Programs (Malitz 1981) and indicate which of 52 broad curricular

areas the course falls (e.g., Agriculture, Business, Health). The documentation does not provide a breakdown of the subject areas into academic and vocational subcategories. This was done based on our best sense of how the distinction is drawn within American high schools.[3]

It is important to keep in mind that this is not an analysis of additional sections of already present courses. Rather, it is an examination of the arrival of new courses within the curriculum. Our presumption is that the availability of different courses is a relevant indicator of educational opportunity. Care must be exercised in interpreting these results since the number of courses is by no means the only indicator of opportunity. In particular we have no direct measures of the quality of the courses that are being offered; nor do we have indicators of how coherent the curriculum is.

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[3] The following subject areas were considered vocational: Agribusiness and Agricultural Production, Agricultural Sciences, Renewable Natural Resources, Architecture and Environmental Design, Business and Management, Accounting Bookkeeping and Related Programs, Apparel and Accessories Marketing, Media Studies, Communication Technologies, Personal Service Occupations, Education, Engineering, Engineering and Related Technologies, Health, Home Economics, Industrial Arts, Law and Law Enforcement, Library Studies, Military Sciences, Military Technologies, Parks and Recreation, Basic Skills, Citizenship, Interpersonal Skills, Sports, Personal Awareness, Religious Education, Law and Police, Construction Trades, Mechanics, and Repairing, Precision Production, Transportation and Materials Moving, Exec H.S. Internship Programs.

The following subject areas were considered academic: Area and Ethnic Studies, Computer and Information Science, Foreign Language, English, Liberal STudies, Biology, Mathematics, Multi-Disciplinary Studies, Physical Education, Philosophy and Religions, Science, Science Technologies, Psychology, Public Affairs, Social Sciences, and Visual and Performing Arts.

The analysis begins by looking generally at the offering of full and part year courses, as well as at the amount of academic credit the courses carry. We then distinguish among academic and vocational courses and make an assessment of differences in the rate of growth in these two areas as the size of the high school increases. Next, we distinguish among subject areas within the academic as well as vocational areas of the curriculum, and obtain estimates of differences in the rate of growth across subject areas. Finally, academic and remedial courses from the academic curriculum were singled out for special attention.

All of the results presented below reflect the weights necessary to correct for the oversampling that were part of the sampling design. The weights have been scaled to reflect the actual number of cases so that tests of significance are not inflated artificially.

Section IV: Results

Full Year and Part Year Course Offerings

Table 1 describes relationships between high school size and various indicators of curricular offerings. The left hand column reveals a strong positive relationship between the size of a high school and the available number of unduplicated full year courses. The zero-order correlation coefficient is .64, and the slope coefficient indicates that every additional student in the graduating class is associated with .15 of a new full year

course. The elasticity coefficient expresses the relationship in percentage terms. According to Table 1 a 10 percent increase in the graduating class is associated with a 3.0 percent increase in the number of unduplicated full year courses. Thus, the number of different full year courses does not keep pace with changes in enrollment. There are proportionately fewer different courses per pupil in large schools than in small schools.

A quadratic term was entered into the regression model to test for curvilinearity in the relationship between size and course offerings. The quadratic term was significant for the sample as a whole and indicates that the number of courses tends to increase at a decreasing rate. While there is some tendency for the relationship between size and course offerings to plateau, the group comparisons make it clear that this is not a dramatic effect and that at least within the range we are considering, additional size translates into increases in course offerings.

The comparisons across urban, suburban, and rural high schools are instructive. The table makes it clear that among like sized high schools, the schools considering themselves rural offer fewer unduplicated full year courses than do the others. Essentially the same link between size and course offerings obtains across the three strata of the sample; what differs are the respective intercepts of the regression equations. This stratification of the sample also reveals that the curvilinear nature of the link between size and course offerings is accounted for by the rural high schools.

Table 1 About Here

The middle panel of Table 1 focuses on part-year offerings and also reveals positive relationships between school size and course offerings. Part year offerings constitute a substantial portion of the American high school

curriculum. Looking at the results for the whole sample, the number of part year courses is roughly one half as large as the number of full year offerings.

One significant difference relative to the results for full year offerings arises in the urban-rural comparisons. Rural high schools offer either a comparable or larger number of part-year courses than their like-sized urban counterparts. Moreover, the link between size and the availability of part year courses is particularly strong. The elasticities are all at least .66 while the highest elasticity for full year offerings was .33.

The right-hand section of the table examines credit offerings, and can be thought of as a combination of the full and part year courses. It is, however, not a simple aggregation of the full and part year courses because both full and part year courses vary in how many credits they carry. For example, a full year course may offer less or more than 1 credit. By counting credits directly we were able to avoid making arbitrary assumptions about weights for part year relative to full year courses. We were also able to avoid a need for parallel analyses of full and part year courses. For these reasons, we rely exclusively on credit count measures of curricular offerings for the balance of this paper.

The results in Table 1 for credits offered are comparable to those seen in the previous panels of the table. There is a strong positive relationship between size and unduplicated credits; there is a tendency for the rural high schools to offer fewer credits than their like sized urban and suburban counterparts; and the relationship is curvilinear for the whole sample as well as for the rural subsample.

Some interesting differences were revealed when we restricted the sample to high schools serving just grades 9-12. Many of the smaller high schools dropped out of this analysis since they typically include grades below grade 9. However, those that remained provided relatively large numbers of different courses for their students. For example, the nine schools falling into the smallest category offered an average of 57.6 different credits compared to the 41.5 average offered by the larger group of small high schools (including those with grades below grade 9).

Academic Relative to Vocational Course Offerings

Table 2 begins to break the curriculum into its components. Here we drew a distinction between the academic and vocational portions of the curriculum. We were interested in estimating the degree to which the academic portion of the curriculum grows relative to the vocational portion as the size of a high school varies. As indicated above, we relied exclusively on unduplicated credit counts for these analyses and provide results for the simple count of credits as well as for each component's percentage share of the total credit count.

Table 2 About Here

For the sample as a whole, academic courses represent 56.8 percent of the non-special education portion of the high school curriculum. There is a slight tendency for the academic share to be higher in the smaller schools where it comes closer to a 60-40 split, but the differences across school size are not large. The correlation coefficient for the academic share variable and size is only equal to -.07. The corresponding coefficient for the

vocational share is .05 and falls short of statistical significance. These results are surprising given the presence in some states of area vocational centers that provide vocational offerings outside of the high school. To the extent that these vocational centers substitute for local school offerings for smaller schools, the academic share can be expected to be higher in smaller high schools.

Table 2 also reveals a tendency for rural schools to offer fewer academic courses compared to urban and suburban schools of comparable size. This tendency is less clearcut in the vocational area of the curriculum. When a dummy variable capturing the rural designation was entered into the regression of course credits on school size, a negative relationship was revealed for the academic portion of the curriculum. Specifically, ruralness was a associated with 1.86 fewer academic course credits. In contrast, a positive but statistically insignificant relationship was found between ruralness and vocational course credits.

Subject Specific Analyses Within the Academic Curriculum

We next differentiated among subject areas within both the academic and vocational areas of the curriculum. Turning to the academic area first, we have separate results to report for English, foreign languages, mathematics (including computer courses), science (including biological and physical sciences), social studies, art (including music and the performing arts), and a residual category called "other."

Table 3 indicates that large differences exist across subjects within the academic portion of the curriculum in the rate at which new courses appear

as the school's size rises. Subjects like English, mathematics, science, and especially social studies grow at rates below the average for the academic area as a whole, while subjects like foreign language, and the visual and performing arts grow at rates substantially above the average. A 10 percent increase in school size is associated with a 6.7 percent increase in foreign language credits and better than a 5 percent increase in the number of visual and performing arts credits but only a 2.1 percent increase in the number of different social studies credits. Recall from Table 2 that the average for the academic area as a whole is 3.7 percent.

To the extent that the availability of new courses is a good indicator of educational opportunities, these results suggest that students in the large compared to the small high schools benefit disproportionately in the foreign language and visual and performing arts portion of the academic curriculum. It also means that in the larger high schools, foreign language and the visual and performing arts represent a larger share of the mix of different courses being offered to students.

Table 3 also reveals average differences across academic subject areas in the availability of different courses. For the sample as a whole, there are on average 9.2 different English courses, 6.6 different foreign language courses, 9.0 different mathematics courses, 6.2 different science courses, 6.1 different social studies courses, 9.3 different visual and performing arts courses, and 5.1 miscellaneous other courses.

If we compare the number of credits found in the smallest high schools with these averages we find the following ratios:

English --	.60
Foreign Language --	.15
Mathematics --	.56
Science --	.53
Social Studies --	.62
Visual and Performing Arts	.39
Other --	.57

These figures indicate that in terms of the availability of courses, small schools curricula are most comparable to larger schools in the English and social studies subject areas and the least comparable in the foreign language and visual and performing arts areas. These figures do not offer any direct insight into how adequate a curriculum is that provides, say, half as many different courses as can be found in the average school. Elsewhere we have attempted to categorize these offerings in terms of the success at offering what we called program comprehensiveness (Haller, Monk, Spotted-Bear, Griffith, and Moss, 1990). Later in this paper we examine the degree to which these courses can be categorized as advanced or remedial in their character.

Table 3 also reveals the presence of curvilinear relationships between school size and curricular offerings. For several of the subjects, the regression analyses revealed N-shaped relationships between school size and the number of unduplicated credits offered and U-shaped relationships between the same school size variable and the percentage share of the academic curriculum accounted for by the subject in question. Such a reversal in the direction of the curvilinearity describes a situation where the growth in credits slows with size in such a way that the respective share of the

curriculum declines more slowly with size. Three of the subjects within the academic curriculum fit this description: English, mathematics, and social studies.

Finally, differences between rural and other schools are noteworthy. Again, there is a tendency for rural high schools to offer fewer different courses compared to similarly sized non-rural schools. Table 4 gives the results of regressing the number of course credits offered in each subject area on a dummy variable constructed to differentiate between rural and other high schools with a control in place for the effects of high school size.

The negative effect of ruralness per se on course offerings is most pronounced in the foreign language, mathematics, and art areas where the difference, controlling for size is better than one full credit. While the differences for science is less striking in Table 4, an inspection of Table 3 suggests that it is the 7 largest rural schools in the sample that are attenuating the negative impact of ruralness. It is also worth noting that these 7 largest rural high schools also offer comparable numbers of different credits in mathematics relative to their urban and suburban counterparts.

The negative effects of ruralness revealed in Table 4 are striking. It is only in English and the residual other category that the effect of ruralness falls short of statistical significance. As we shall show below, the relationship between ruralness, controlling for size, is different within the vocational area of the curriculum.

Table 4

Effects of Ruralness on Academic Course Offerings--Controlling for School Size

Subject	Effect of Ruralness	Signif.
English	-.28	.473
Foreign Language	-2.08	.000
Math and Computer	-1.31	.000
Science	-.73	.005
Social Studies	-.90	.001
Visual and Perf Arts	-1.15	.019
Other	+.01	.985

Subject Specific Analyses Within the Vocational Curriculum

In Table 5 we focus on courses within the vocational curriculum. These courses, in contrast to those within the academic curriculum, are less evenly distributed across subject areas. Business and home economics, in particular, account for close to 50% of the course offerings within the vocational curriculum. If the subject area with the third largest share (construction trades) is added, 64.4 percent of the unique course credits in vocational education is accounted for. Within the academic curriculum, the two subjects with the largest numbers of courses (English and mathematics) accounted for 37.4 percent of the course offerings. If the subject with the third largest

share (visual and performing arts) is added, the percentage accounted for reaches 54.1.

Table 5 About Here

The remaining subjects within the vocational curriculum (agriculture, industrial arts, mechanical trades, and personal services (e.g., cosmetology) account for small percentage shares of the courses offered. None of these subjects accounts for more than 8.1 percent of the available unique course credits. The share for personal services was surprisingly small at 0.7 per cent for the sample as a whole. However, this result needs to be interpreted in light of the fact that personal service courses offered at regional educational centers are not included in these counts.

Here we also find evidence of the subject's respective shares of the curriculum shifting as the size of the high school changes. Agriculture, business, and home economics account for smaller shares while industrial arts, mechanical trades, construction trades, personal services, and the residual other category account for larger shares of the vocational curriculum as the size of a high school increases. These results suggest that the first priority is assigned to agriculture, business and home economics so that even in the smallest schools course work is available in these subjects. In these three areas of the vocational curriculum the ratio of course offerings in the smallest schools to course offerings in the sample average never falls below .53; in home economics the ratio is .67 indicating that the smallest high schools provide 67% of the different courses provided in the average high schools.

Much smaller ratios are found elsewhere in the curriculum, suggesting that the discrepancies between what small and average high schools offer are

larger. The most extreme case is personal service courses where the smallest schools have no courses compared to .5 of a course, on average, for the sample as a whole. The least extreme case occurs in industrial arts where the smallest schools offer 36% of what can be found on average in the sample as a whole.

In contrast to the academic curriculum, there is greater evenness in the degree of share growth and decline across subject areas within the vocational curriculum. Recall that within the academic curriculum, two subjects' shares grew dramatically (foreign language and visual and performing arts courses) while all the others declined moderately. Within the vocational curriculum, there is less of a tendency for the growth to occur in such narrowly focused areas. Indeed, shares grow for 5 subject areas and decline for 3.

There is some evidence in Table 5 of the same sort of reversal in the direction of the curvilinearity that was found for the academic curriculum in Table 3. In particular business and home economics both grow at slower rates as school size in a way that leads to less rapidly declining shares of the vocational curriculum. In contrast, the reduction in the rate of decline in the agriculture share of the vocational curriculum as school size increases is not matched by a decreasing rate of increase in the number of course credits offered.

Differences between rural and other types of school districts also exist within the vocational curriculum among like sized high schools. Table 6 provides results which are analogous to those reported in Table 4 for the academic curriculum. A comparison of the two tables reveals an intriguing difference between vocational and academic curricular offerings.

As Table 6 indicates, with the exception of construction trades, none of the negative relationships approach statistical significance. Moreover, as is perhaps not surprising, the incidence of different agriculture courses is positively associated with being in a rural setting. It appears that ruralness per se is less of a barrier to offering vocational courses than is the case for academic courses.

Table 6

Effects of Ruralness on Academic Course Offerings--Controlling for School Size

Subject	Effect of Ruralness	Signif.
Agriculture	+.78	.009
Business	-.46	.328
Home Economics	-.39	.245
Construction Trades	-2.0	.003
Personal Services	-.17	.202
Mechanical Trades	-.33	.466
Other Vocational	-.33	.598

To the extent that vocational courses are more likely than academic courses to be provided regionally, and to the degree that rural areas are more likely to depend more heavily on regionally delivered courses, the absence of negative relationships in Table 6 are especially intriguing. One might expect the availability of regionally delivered vocational courses to substitute for

locally delivered courses more in rural than in the nonrural areas. Thus, one might expect to find a larger negative impact of ruralness per se in the vocational compared to the academic curriculum. Indeed, this is how the strong negative relationship between construction trades and ruralness can be explained. If this thinking is correct, it is at least plausible that the inclusion of regionally provided courses would suggest that ruralness is positively associated with the availability of vocational courses.

However, ruralness may inhibit the use of regionally delivered courses, because of geographical barriers and long distances. Thus, regional services may be less available in rural areas than in non-rural areas of a given size. If this is the case, the addition of regionally delivered vocational services would increase the offerings in the non-rural areas more than in the rural areas, and a negative impact of ruralness per se on vocational course offerings could be revealed.

Differences Among Types of Courses Within Academic Subject Areas

Finally, we differentiated between advanced or accelerated courses and remedial courses within several of the academic subjects we studied. Our coding system here differs from what we used elsewhere to conceive of a program of courses (see Haller, Monk, Spotted-Bear, Griffith, and Moss, 1990). For the analyses reported here, we were more restrictive and counted as advanced courses only those courses described with terms like: accelerated,

advanced placement, college placement, and honors.[4] For remedial courses we looked only at courses described as: basic, simplified, practical, survival, and reduced pace. Table 7 reports the results for these two types of courses in the English, mathematics, science, and social studies subject areas. For foreign language courses, only advanced courses are dealt with since no remedial courses were discerned using the methods we employed.

Table 7 About Here

Before turning to the relationship between size and these course offerings, it is interesting to look at differences for the whole sample across curricular areas. Our results show that science is the subject where the most advanced course credits are offered. In science this amounts to 1.1 different course credits, and this exceeds the .9 we found for English, the .8 revealed for mathematics, the .4 for social studies, and the .3 for foreign languages. Keep in mind that these data describe course offerings in the early 1980's and do not reflect the effects of the more recent reform efforts to expand the mathematics, science, and foreign language offerings.

The number of unduplicated remedial course credits is either comparable to (science and social studies) or greater than (English and mathematics) the number of unduplicated advanced course credits. The largest difference appears in mathematics where, on average, the high schools offer 1.8 remedial courses and .8 advanced courses. This is an intriguing result given that we have counted all calculus courses as advanced course credits.

The Table 7 reveals positive relationships between high school size and the number of both advanced and remedial courses available in each of the

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[4] The one exception to this method occurred in mathematics where we placed all calculus courses in the advanced category.

areas we examined. The table also shows that the share of each subject specific curriculum devoted to advanced and remedial courses (with the exception of remedial science where there was no change in the share) increases with high school size. These findings suggest that as school size increases the number of different "bread and butter" courses grows at a slower rate compared to the number of both remedial and advanced courses.

Going further, it appears that advanced and remedial portions of the curriculum do not grow at the same rate. A comparison of the strength of the positive effects on share between advanced and remedial courses for each subject area suggests that advanced courses grow more rapidly.

Table 7 also indicates that the rate of growth of both the number of credits and the respective share slows as size reaches higher levels in several of the subjects. Specifically, the advanced English courses are so characterized, as are advanced mathematics, remedial mathematics, advanced foreign language, and remedial social studies courses.

Finally, we see some evidence of the negative relationship between ruralness and curricular offerings within this subset of the academic curriculum, although, as a comparison of Table 8 with Tables 4 and 6 shows, the discrepancies between rural and non-rural high schools are smaller here than elsewhere in the curriculum.

If we use .05 as the criterion significance level, ruralness makes a significant difference in the offering of advanced mathematics, advanced foreign language, and advanced English course credits. Recall from Table 4 that ruralness makes a significant difference in every academic area except English. The absence of large and significant differences in Table 8 in the science and social studies areas suggests that what differences exist in these

areas between rural and nonrural schools are confined to courses that are neither advanced nor remedial in their nature.

Table 8

Effects of Ruralness on Academic Course Offerings--Controlling for School Size

Subject	Effect of Ruralness	Signif.
Advanced English	-0.52	.000
Remedial English	-0.04	.809
Advanced Foreign Lang	-0.17	.037
Adv. Math and Computer	-0.22	.014
Remedial Math and Computer	-0.04	.797
Advanced Science	+0.02	.863
Remedial Science	-0.06	.517
Advanced Social Studies	-0.14	.062
Remedial Social Studies	+0.02	.653

Section V: Discussion

These results can be summarized as follows:

(1) While larger high schools offer larger numbers of different courses than do smaller schools, the increase is neither proportionate (in a 1-to-1 sense) nor linear. To be specific, a 10% increase in the size of the

graduating class is associated with a 3.9% increase in the number of unduplicated credits offered. Moreover, the increase is such that its rate declines as school size increases.

(2) A small difference exists in the rate at which academic and vocational course offerings grow with school size. A 10% increase in the size of the graduating class is associated with a 3.7% increase in academic offerings and a 4.2% increase in vocational offerings. Thus, vocational offerings occupy a slightly larger share of the high school curriculum in larger compared to smaller high schools. We were surprised at how small this difference is given whatever tendency there is for small high schools to offer vocational courses through regional delivery systems.

(3) Large differences in size related growth exist across subject areas, especially within the academic curriculum. For example, a 10% increase in size is on average associated with a 6.7% increase in unduplicated foreign language credits; a 2.1% increase in unduplicated social studies credits; a 5.2% increase in unduplicated visual and performing arts credits; and a 3.0% increase in unduplicated mathematics and computer credits. As a result of these different rates of growth, the apportionment of courses across subjects within the academic curriculum is related to school size. For example, in schools with more than 400 pupils in the graduating class, visual and performing arts credits represent upwards of 21% of the different courses offered within the academic curriculum. The analogous figure for the smallest high schools (those with fewer than 25 pupils in the graduating class) is 13.8%. In the vocational area, business, agriculture, and home economics grow more slowly than do courses in industrial arts, mechanical trades, construction trades, and personal services.

(4) Self-designation as a rural high school is associated with fewer course offerings, controlling for size. The magnitude of the difference varies with the area of the curriculum and is most pronounced in the academic area. However, differences between rural and non-rural schools in the provision of advanced and remedial academic courses were quite small. This finding suggests that the negative effect of ruralness on the number of curricular offerings within the academic curriculum applies primarily to non-advanced and non-remedial courses.

(5) Finally, larger school size appears to pay more handsome dividends in the advanced compared to the remedial portions of the academic curriculum. It appears that schools add advanced courses more rapidly than they do remedial courses as their size increases.

These findings raise important equity issues. Is it fair for school size to be related to the share of a curriculum devoted to one area rather than another? These share differences may reflect differences in opportunity that have implications for both the financing of education as well as the organizational structure of state schooling systems. Equity issues also arise in the rural-nonrural comparisons. Is it fair for students in rural high schools to have fewer courses available to them than students in similarly sized high schools elsewhere in the nation? The data indicate that in several areas, particularly within the academic curriculum, these differences are not trivial. Moreover, the fact that the differences exist with controls in place for size suggests that the most traditional remedy for rural schools' problems, namely the consolidation of small schools into large schools, has not succeeded in offsetting this aspect of rural inequality.

However, we must be mindful of the fact that these analyses deal exclusively with the incidence of different courses. They do not reveal differences in the number of sections offered of particular courses, and thus cannot be used to reach conclusions about size related differences in the share of resources received by different subjects. Thus, we can not claim that our analyses show that proportionately more resources are spent on, say, the visual and performing arts in large high schools compared to small high schools. In this light, counts of different course credits offered can be interpreted as relative measures of opportunity. They cannot be so easily interpreted as absolute measures of deprivation.

The findings reveal size related differences in these relative opportunities and suggest that (1) both school size and rurality have consequences for opportunities provided for students and (2) these consequences are distributed unequally across areas of the curriculum. To the degree that students differentiate themselves in terms of their curricular choices (or are encouraged to do so by others as can be the case when tracking is practiced) these inequalities will translate into unequal treatment of different categories of students. The point is that whatever curricular burden is associated with being enrolled in a small rural school need not be evenly distributed across categories of students. Or, equivalently, whatever curricular advantages attend being enrolled in a large school are not evenly distributed across categories of students.

The findings also raise epistemological issues. For example, why are there, on average, more mathematics and English courses than social studies and science courses?, or why are there, on average, more business and home economics courses than personal service courses?, or why are there, on

average, more remedial mathematics courses than advanced mathematics courses? Do these differences stem from the intrinsic nature of these subject matters? From state imposed graduation requirements? Or for some other factors, perhaps differences in the availability of teachers with the relevant subject matter knowledge? Notice how easy it is to beg this question. To answer that state requirements are responsible or that it is related to the supply of teachers simply invites further questions about why such influences exist.

Several caveats need to be made which have implications for future research. These analyses permit only the crudest assessments of student access to school course offerings. We have been presuming that the mere appearance of a course within a school's curriculum means that it is reasonably available. All schools face scheduling problems, and there is good reason to suspect that school size relates to the nature if not the severity of these problems. Further research is needed to ascertain the impact of school size on access to available courses. The High School and Beyond data include information about course taking behaviors of students. We are hopeful that these data will throw light on the role access to courses plays in the distribution as well as the utilization of educational opportunities.

Moreover, the data do not permit an assessment of course quality. It is also possible for differences to exist within the sample in how a given package of courses is labeled. In other words, two high schools might offer the same curriculum but offer substantially different descriptions. Short of resorting to a series of case studies, it is hard to conceive of how these difficulties can be addressed.

More work also needs to be done disentangling the effects of ruralness from other background factors. For example, what we are calling a rural

effect may be a spurious result stemming from underlying relationships between poverty and course offerings and poverty and ruralness. Elsewhere we have looked more carefully at measures of poverty and have not found them related to course offerings as measured here (see Monk 1990).

Finally, it is worth noting that a replication using more recent data would be useful to discern the effects of the school reform movement. We suspect that the states' success at increasing high school graduation requirements, particularly in mathematics and science has stimulated the growth of courses in these areas. It would be interesting to assess the degree to which these additions were in fact add-on's rather than substitutes for other course offerings. In other words, schools may have "financed" the additional science and mathematics courses in their curriculum by further limiting their offerings in other areas.

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Table 1

Total Number of Unduplicated Courses (Full Year and Part Year) and Credits by School Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	Number of Unduplicated Full Year Courses				Number of Unduplicated Part Year Courses				Number of Unduplicated Credits Offered			
	Whole Sample	Urban	Subur	Rural	Whole Sample	Urban	Subur	Rural	Whole Sample	Urban	Subur	Rural
<25	39.13 9.97 72			39.13 9.97 72	6.41 10.23 72			6.41 10.23 72	41.52 12.21 72			41.52 12.21 72
25-49	44.96 8.28 95		44.58 14.26 18	45.05 6.17 77	12.36 25.06 95		16.33 13.05 18	11.46 26.97 77	50.58 11.83 95		59.50 18.97 18	48.56 8.26 77
50-99	52.60 20.99 134		51.21 20.30 30	53.00 21.17 103	23.61 26.77 134		12.84 18.14 30	26.78 28.05 103	68.71 27.61 134		62.23 23.03 30	70.61 28.55 103
100-199	68.12 25.58 147	101.22 40.95 3	73.22 27.64 45	64.70 22.60 99	31.78 30.36 147	13.26 25.10 3	31.21 29.73 45	32.67 20.62 99	89.84 32.00 147	102.26 38.62 3	96.03 44.11 45	86.62 23.65 99
200-299	93.42 34.27 93	107.49 45.05 19	91.25 31.41 45	87.68 27.34 29	51.87 86.44 93	37.04 37.48 19	61.87 118.46 45	46.02 30.87 29	123.17 48.43 93	135.35 54.49 19	119.87 50.13 45	120.37 39.64 29
300-399	101.50 40.21 66	114.05 43.31 18	101.02 39.16 36	85.69 32.22 13	65.10 53.21 66	55.90 55.89 18	70.64 53.09 36	62.47 47.75 13	146.11 47.11 66	156.91 62.21 18	147.59 40.42 36	127.29 32.78 13
≥400	114.25 55.22 76	112.89 51.58 20	115.71 59.30 48	108.31 31.65 7	78.29 58.65 76	71.51 60.25 20	82.72 60.44 48	67.67 34.27 7	165.17 59.69 76	159.08 46.24 20	168.45 66.10 48	160.16 44.52 7
Whole Sample	70.63 39.24 683	110.88 46.73 60	85.38 44.83 222	56.44 24.89 401	35.96 51.33 683	52.80 53.79 60	51.37 70.87 222	24.91 31.31 401	93.55 54.42 683	147.80 55.67 60	117.51 60.92 222	72.16 36.21 401
Correlation Coefficient	.64**	.08	.55**	.62**	.44**	.28**	.34**	.47**	.73**	.19	.66**	.74**
Slope	.15**	.02	.14**	.16**	.14**	.10*	.14**	.15**	.25**	.07	.23**	.28**
Evidence of Curvilinearity	yes**	no	no	yes**	yes**	no	no	yes*	yes**	no	no	yes**
Elasticity	.30**	.13	.33**	.24**	.69**	.86**	.79**	.66**	.39**	.31*	.42**	.36**

* = < .05
** = < .01

Table 2

Decompositon of Unduplicated Credit Offerings into Academic and Vocational Shares By School Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	ACADEMIC								VOCATIONAL							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
<25	24.4 7.2 72	60.1 10.2					24.4 7.2 72	60.1 10.2	17.1 7.4 72	39.9 10.2					17.1 7.4 72	39.9 10.2
25-49	28.6 6.3 95	57.6 8.6			31.1 8.6 18	56.8 18.2	28.1 5.5 77	57.7 4.2	21.9 9.4 95	42.3 8.6			28.4 19.3 18	43.2 18.2	20.4 3.8 77	42.1 4.4
50-99	37.6 11.9 134	57.3 9.6			36.3 12.5 30	59.0 5.4	38.1 11.8 103	56.9 10.5	30.8 18.6 134	42.4 9.6			25.9 11.7 30	40.9 5.4	32.3 20.0 103	42.8 10.5
100-199	48.3 15.4 147	55.4 10.9	62.7 25.9 3	62.2 6.8	52.2 18.2 45	58.1 14.0	46.0 13.1 99	53.9 9.1	41.4 22.5 146	44.5 10.2	39.5 24.5 3	37.8 6.8	44.4 32.6 44	42.5 12.4	40.1 16.3 99	45.7 8.9
200-299	67.9 25.9 93	56.7 10.5	73.5 25.9 19	56.1 10.0	67.5 30.9 45	57.6 11.7	64.9 15.5 29	55.6 9.0	54.9 29.3 92	43.1 9.5	61.3 38.2 19	43.5 10.2	52.2 24.6 44	42.4 9.6	54.8 29.8 29	43.7 9.1
300-399	76.9 20.6 66	54.4 10.5	79.7 21.0 18	53.8 11.2	80.6 20.7 36	56.0 10.7	63.0 14.1 13	50.6 8.0	68.1 35.3 66	45.0 10.2	75.7 49.8 18	45.5 10.8	65.9 30.2 36	43.3 10.4	63.5 24.5 13	48.9 7.9
≥400	90.6 30.9 76	56.4 10.7	88.7 23.4 20	57.1 10.4	91.9 34.1 48	56.4 11.1	87.2 28.9 7	54.8 9.1	73.6 38.4 76	43.0 10.7	69.3 33.7 20	42.2 10.6	75.6 42.0	43.1 11.1	72.3 27.0 7	44.8 9.7
Whole Sample	51.1 28.0 683	56.8 10.2	79.8 24.2 60	56.1 10.3	64.7 32.2 222	57.3 11.9	39.3 17.7 401	56.5 9.2	42.1 30.6 681	43.0 9.9	67.0 40.2 60	43.3 10.3	52.5 34.7 220	42.6 11.0	32.6 21.3 401	43.2 9.2
Correlation Coefficient	.77**	-.07*	.33**	.10	.68**	-.06	.76**	-.18**	.59**	.05	.05	-.11	.52**	.04	.62**	.17**
Slope	.13**	-.00	.05*	.01	.12**	-.00	.14**	-.02**	.11**	.00	.01	-.01	.10**	.00	.14**	.02**
Evidence of Curvilinearity	yes**	yes*	no	no	no	no	yes**	yes*	yes**	yes*	no	no	no	no	yes**	yes*
Elasticity	.37**	-.02**	.34**	.03	.42**	-.00	.32**	-.04**	.42**	.02**	.26	-.05	.44**	.01	.41**	.05**

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated academic and vocational credits.
* = $p < .05$
** = $p < .01$

Table 3

Decomposition of the Academic Curriculum into Subject Offerings By School Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	ENGLISH								FOREIGN LANGUAGES							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
<25	5.5 1.8 72	23.4 7.0					5.5 1.8 72	23.4 6.9	1.0 1.7 72	3.6 5.8					1.0 1.7 72	3.6 5.8
25-49	5.3 2.3 95	18.8 7.0			4.8 1.0 18	16.0 2.4	5.5 2.4 77	19.5 7.4	1.2 1.3 95	4.1 4.4			1.3 1.4 18	4.9 6.2	1.2 1.2 77	3.9 3.9
50-99	7.2 2.7 131	19.3 5.7			7.0 2.6 30	19.9 6.0	7.3 2.7 101	19.1 5.5	3.1 2.0 134	7.8 4.7			2.9 2.1 30	7.3 4.7	3.2 2.0 103	7.9 4.7
100-199	9.1 3.8 146	18.7 5.0	9.3 2.9 3	15.2 1.7	9.7 3.4 44	18.6 5.1	8.9 3.9 99	18.9 5.0	6.1 3.8 147	12.2 5.7	11.6 8.1 3	18.4 9.5	7.6 4.5 45	13.9 5.6	5.2 2.9 99	11.2 5.4
200-299	11.7 5.7 92	17.2 5.5	12.3 7.4 19	16.8 6.3	11.2 5.2 44	16.6 5.0	12.1 5.1 29	18.3 5.4	10.7 7.4 93	15.0 7.1	12.0 6.8 19	16.3 7.8	11.1 8.8 45	14.7 7.7	9.4 5.0 29	14.6 5.8
300-399	13.0 5.2 66	17.1 5.8	13.3 6.0 18	16.3 5.3	13.6 5.0 36	17.3 6.1	11.0 3.5 13	17.8 5.4	12.9 5.7 66	16.6 5.6	14.1 4.7 18	18.2 5.6	13.5 6.5 36	16.3 5.9	9.6 3.2 13	15.2 4.5
≥ 400	15.0 6.2 75	16.6 4.7	14.1 5.1 20	15.9 4.4 -	15.2 6.4 48	16.5 4.6	16.3 6.5 7	18.7 5.2	15.6 7.4 76	17.3 7.2	15.3 6.1 20	17.3 5.6	15.9 8.2 48	17.6 8.2	14.1 5.8 7	16.1 4.0
Whole Sample	9.2 5.2 679	18.7 6.1	13.0 6.2 60	16.3 5.3	11.1 5.7 220	17.5 5.3	7.6 4.0 399	19.8 6.3	6.6 6.8 683	10.7 7.6	13.7 6.1 60	17.3 6.4	9.9 8.1 222	13.6 7.7	3.8 3.9 401	8.0 6.3
Correlation Coefficient	.62**	-.22**	.18	-.04	.59**	-.12*	.57**	-.15**	.73**	.57**	.27*	.06	.61**	.41**	.76**	.57**
Slope	.02**	-.01**	.01	-.00	.02**	-.00	.02**	-.01*	.03**	.03**	.01*	.00	.03**	.02**	.03**	.04**
Elasticity	.30**	-.08**	.32	-.01	.39**	-.03	.25**	-.07**	.67**	.32**	.37*	.05	.74**	.34**	.55**	.27**
Evidence of Curvilinearity	yes**	yes**[b]	no	no	no	no	yes*	yes*[c]	yes**	yes**	no	no	no	yes**	yes*	yes**

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated academic credits.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 3 (continued)

Decomposition of the Academic Curriculum into Subject Offerings By School Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	MATHEMATICS AND COMPUTERS								SCIENCE							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	5.0 1.5 72	21.3 7.2					5.0 1.5 72	21.3 7.1	3.3 1.5 72	13.2 4.7					3.3 1.5 72	13.2 4.6
25-49	5.5 1.1 95	19.7 3.7			5.7 1.4 18	18.6 1.1	5.5 1.0 77	20.0 4.0	4.0 1.3 95	14.0 4.2			3.7 .5 18	12.5 2.5	4.0 1.4 77	14.3 4.4
50-99	7.2 2.3 134	20.4 9.4			7.2 2.0 30	20.5 3.0	7.2 2.4 103	20.4 10.5	5.0 1.9 134	13.4 3.8			4.7 2.0 30	13.1 4.1	5.1 1.9 103	13.6 3.7
100-199	8.9 2.8 146	18.7 3.5	13.0 5.2 3	21.3 4.2	9.5 3.1 44	18.1 3.3	8.5 2.3 99	18.8 3.4	5.9 2.7 146	12.2 3.8	6.5 3.1 3	10.0 1.7	7.0 3.1 44	13.3 4.1	5.4 2.3 99	11.8 3.6
200-299	11.9 4.5 92	17.6 4.3	12.5 4.3 19	17.4 4.8	12.4 5.2 44	18.4 4.4	10.7 3.1 29	16.6 3.2	7.9 3.5 92	11.7 3.6	8.1 3.7 19	11.6 5.0	8.1 4.1 44	11.8 3.3	7.5 2.1 29	11.8 2.8
300-399	12.4 4.3 66	16.1 3.8	13.0 3.9 17	16.3 3.4	12.9 4.4 36	16.0 3.8	10.1 3.5 13	15.8 4.3	8.9 3.1 66	11.6 3.3	8.6 2.6 17	10.8 2.7	9.6 3.2 36	12.0 3.3	7.4 2.8 13	11.6 3.5
≥ 400	14.0 5.5 76	15.7 4.0	13.6 4.9 20	15.5 4.4	14.3 5.6 48	15.9 3.9	13.3 5.8 7	14.9 2.5	10.2 4.4 75	11.3 3.2	9.5 3.9 20	10.6 2.7	10.5 4.6 48	11.5 3.5	10.3 4.1 7	11.8 2.4
Whole Sample	9.0 4.5 681	18.7 6.0	13.1 4.5 60	16.6 4.5	11.1 5.1 220	17.7 4.0	7.3 3.0 401	19.6 6.9	6.2 3.5 680	12.6 3.9	8.6 3.5 60	10.9 3.6	7.8 4.1 219	12.3 3.7	5.0 2.4 401	13.0 4.0
Correlation Coefficient	.65**	-.28**	.09	-.29*	.56**	-.33**	.61**	-.22**	.62**	-.20**	.27*	-.02	.53**	-.17**	.57**	-.17**
Slope	.018**	-.01**	.003	-.01*	.02**	-.01**	.02**	.02**	.013**	-.005**	.006*	-.00	.012**	-.004**	.014**	-.007*
Evidence of Curvilinearity	yes**	yes**[c]	no	no	yes*	no	yes**	no	yes**	no	no	no	yes*	no	no	no
Elasticity	.30**	-.08**	.11	-.23*	.33**	-.09**	.25**	-.07**	.32**	-.06**	.37**	.03	.37**	-.05*	.26**	-.05**

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated academic credit.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

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Table 3 (continued)

Decomposition of the Academic Curriculum into Subject Offerings By School Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	SOCIAL STUDIES								VISUAL AND PERFORMING ARTS							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	3.8 1.3 72	15.9 3.6					3.8 1.3 72	15.9 3.6	3.6 2.0 59	13.8 7.6					3.6 2.0 59	13.8 7.6
25-49	5.0 2.9 95	17.0 7.3			7.8 4.7 18	23.3 8.8	4.3 1.7 77	15.6 6.1	4.2 2.4 95	14.0 6.7			5.4 2.7 18	16.3 6.8	3.9 2.2 77	13.4 6.5
50-99	5.0 1.6 131	13.7 4.8			5.4 2.1 30	14.6 4.1	4.9 1.5 101	13.4 5.0	6.3 3.6 128	15.3 6.0			5.4 2.8 28	13.3 4.3	6.5 3.7 100	15.9 6.3
100-199	5.6 2.6 147	11.6 4.4	6.1 3.4 3	9.1 2.9	5.3 2.9 45	10.2 4.8	5.6 2.5 99	12.3 4.1	7.7 3.9 146	15.7 6.2	9.9 4.4 3	15.4 4.1	8.6 4.8 44	15.6 6.4	7.3 3.4 99	15.7 6.2
200-299	7.8 3.4 92	11.7 4.1	7.3 3.9 19	9.9 3.7	8.1 3.5 44	12.2 4.1	7.7 3.0 29	12.0 4.0	12.3 7.0 93	18.6 9.2	15.4 9.7 19	20.0 8.1	11.5 6.7 45	18.6 11.5	11.6 4.4 29	17.7 4.5
300-399	7.8 3.7 66	10.1 3.5	7.8 3.6 18	9.7 3.3	8.4 3.9 36	10.5 3.8	6.2 2.2 13	9.9 2.9	15.4 6.0 66	19.9 5.7	16.5 6.0 18	20.9 5.8	15.7 6.0 36	19.4 5.6	12.9 5.2 13	20.3 5.9
≥ 400	9.0 4.3 75	10.0 3.5	8.9 3.7 20	10.0 3.1	9.1 4.5 48	10.0 3.7	8.9 4.1 7	10.2 3.3	19.2 9.3 75	21.1 6.1	19.9 8.1 20	22.3 6.1	19.3 10.0 48	20.8 6.2	17.0 7.0 7	19.6 3.7
Whole Sample	6.1 3.3 679	12.9 5.3	7.9 3.8 60	9.8 3.3	7.4 4.0 220	12.3 5.9	5.1 2.3 359	13.7 5.0	9.3 7.2 662	16.7 7.2	16.9 8.3 60	20.8 6.8	12.1 8.3 218	17.8 7.8	6.5 4.4 384	15.4 6.6
Correlation Coefficient	.48**	-.37**	.22*	.05	.32**	-.38**	.46**	-.30**	.70**	.32**	.27*	.16	.64**	.28**	.65**	.25**
Slope	.01**	-.01**	.006	.00	.007**	-.01**	.011**	-.02**	.03**	.01**	.015*	.01	.031**	.01**	.030**	.02**
Evidence of Curvilinearity	yes**	yes**[c]	no	no	no	yes**[c]	yes**	yes**[c]	yes*	yes*	no	no	no	no	no	no
Elasticity	.21**	-.16**	.40*	.07	.18**	-.24**	.18**	-.13**	.52**	.17**	.53**	.19	.56**	.16**	.45**	.16**

[a] Number of unduplicated credits

[b] Percent of the total number of unduplicated academic credits

[c] U-shaped.

* = $p < .05$

** = $p < .01$

Table 3 (continued)

Decomposition of the Academic Curriculum into Subject Offerings By School Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

	OTHER ACADEMIC							
Graduating Class Size	Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%
< 25	2.9 1.6 72	11.5 5.6					2.9 1.6 72	11.5 5.6
25-49	3.4 1.7 95	12.4 5.9			2.3 1.1 18	8.4 4.9	3.7 1.7 77	13.3 5.8
50-99	4.2 2.3 134	11.2 5.1			4.2 2.4 30	12.3 6.8	4.3 2.2 103	10.9 4.5
100-199	5.2 2.5 147	11.3 8.0	6.4 3.7 3	10.6 4.4	5.2 2.1 45	11.6 12.6	5.1 2.6 99	11.2 4.7
200-299	6.0 3.3 92	8.9 3.5	6.1 2.8 19	8.3 2.8	6.1 3.8 44	9.2 3.7	5.9 2.8 29	9.0 3.6
300-399	6.6 3.2 66	8.7 3.7	6.9 3.2 18	8.7 3.2	6.8 3.3 36	8.6 3.9	5.8 2.5 13	9.4 3.7
≥ 400	7.9 5.1 75	8.4 3.4	7.4 3.8 20	8.3 3.5	8.2 5.7 48	8.4 3.4	7.2 2.9 7	8.7 3.3
Whole Sample	5.1 3.3 681	10.6 5.8	6.8 3.4 60	8.5 3.3	5.9 4.0 220	9.8 7.1	4.3 2.4 401	11.3 5.1
Correlation Coefficient	.47**	-.21**	.21	-.02	.45**	-.12*	.38**	-.19**
Slope	.01**	-.01**	.005	-.00	.010**	-.01	.010**	-.01**
Evidence of Curvilinearity	no	yes*[c]	no	no	no	no	Yes*	no
Elasticity	.29**	-.09**	.29	-.04	.37**	-.05*	.26**	-.05*

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated academic credit.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 5
Decomposition of the Vocational Curriculum into Subject Offerings by Schools Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	AGRICULTURE								BUSINESS							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	1.6 2.0 72	11.0 15.5					1.6 2.0 72	11.0 15.5	5.7 2.3 72	35.9 11.6					5.7 2.3 72	35.9 11.6
25-49	2.0 2.4 95	9.1 11.2			2.2 1.8 18	6.4 4.8	1.9 2.5 77	9.7 12.1	6.2 2.0	30.6 9.6			6.8 2.5 18	31.0 12.7	6.2 1.8 77	30.6 8.8
50-99	3.9 2.9 134	13.2 9.5			3.3 2.7 30	13.9 12.2	4.1 2.9 103	13.0 8.6	8.1 4.2 134	28.4 10.3			6.9 2.8 30	27.9 7.9	8.5 4.4 103	28.6 10.9
100-199	3.4 3.2 147	8.2 6.9	0.0 0.0 3	0.0 0.0	3.3 3.9 45	6.8 7.8	3.6 2.8 99	9.1 6.3	10.5 4.5 147	27.4 8.9	12.8 4.4 3	34.8 5.8	10.6 6.2 45	27.5 2.7	10.4 3.5 99	27.2 6.5
200-299	2.9 3.8 93	5.0 6.2	1.9 3.7 19	2.8 4.8	2.8 3.7 45	4.7 5.7	3.7 3.8 29	6.7 7.2	14.2 5.5 93	29.0 10.8	16.7 7.6 19	30.4 12.6	13.2 5.1 45	27.8 10.1	14.2 3.8 29	29.8 10.3
300-399	2.7 3.6 66	3.9 5.2	2.2 4.6 18	2.4 3.5	2.2 2.7 36	3.1 4.3	4.7 3.7 13	7.9 7.2	16.1 6.1 66	25.9 9.0	18.1 7.6 18	27.0 8.2	15.5 5.6 36	25.7 10.0	14.9 4.2 13	24.8 6.5
≥ 400	2.2 3.5 76	2.8 4.2	1.5 2.9 20	2.0 3.7 -	2.2 3.5 48	2.6 3.8	4.3 4.3 7	6.2 6.1	17.7 7.6 76	26.5 11.1	17.7 7.0 20	27.6 12.1	17.5 8.0 48	26.0 11.1	18.7 7.1 7	26.9 7.5
Whole Sample	2.8 3.2 683	8.1 9.7	1.8 3.7 60	2.3 4.0	2.7 3.3 222	5.8 7.7	3.1 3.0 401	10.3 10.5	10.8 6.3 683	28.9 10.5	17.3 7.3 60	28.7 11.2	12.6 6.9 222	27.3 10.9	8.8 4.6 401	29.9 10.0
Correlation Coefficient	-.02	-.31**	-.04	-.04	-.06	-.33**	.22**	-.12**	.62**	-.17**	.07	-.08	.55**	-.11*	.63**	-.21**
Slope	-.00	-.02**	-.00	-.00	-.00	-.01**	.01**	-.01*	.02**	-.01**	.00	-.01	.02**	-.01	.03**	-.02**
Evidence of Curvilinearity	no	yes**[c]	no	no	no	yes**[c]	yes**	no	yes**	yes*	no	no	yes*	no	yes*	yes**[c]

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated vocational credit.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 5 (continued)

Decomposition of the Vocational Curriculum into Subject Offerings by Schools Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	HOME ECONOMICS								INDUSTRIAL ARTS							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	4.3 2.8 72	22.7 12.5					4.3 2.8 72	22.7 12.5	1.0 1.6 72	3.9 6.4					1.0 1.6 72	3.9 6.4
25-49	4.8 1.2 95	23.9 7.5			5.6 1.5 18	27.7 13.0	4.6 1.1 77	23.0 5.1	1.2 1.5 95	4.8 4.8			2.1 2.3 18	5.0 3.8	1.0 1.1 77	4.7 4.9
50-99	5.6 3.2 134	21.0 11.9			5.6 2.8 30	21.5 7.6	5.7 3.3 103	20.9 12.9	2.0 2.5 134	6.0 5.4			1.4 1.9 30	4.4 4.9	2.2 2.6 103	6.4 5.4
100-199	6.0 3.1 147	15.5 6.2	6.8 3.2 3	18.2 4.2	6.4 3.8 45	15.9 6.6	5.8 2.6 99	15.3 6.1	2.7 2.8 147	6.3 4.7	2.9 2.2 3	8.7 5.5	2.7 2.9 45	6.1 4.9	2.8 2.8 99	6.3 4.5
200-299	7.5 4.0 93	14.7 5.6	8.1 5.4 19	13.4 5.1	6.9 2.7 45	14.4 5.5	8.2 4.4 29	16.0 5.8	3.6 3.9 93	6.0 4.8	3.5 4.4 19	4.7 4.1	3.9 3.6 45	7.1 5.3	3.2 3.8 29	5.3 3.9
300-399	8.7 5.0 66	13.6 5.2	10.2 7.4 18	14.1 5.9	8.3 3.7 36	13.5 5.2	7.9 3.3 13	13.1 4.2	4.7 4.6 66	6.5 4.8	5.2 5.3 18	6.3 3.9	4.0 2.8 36	5.9 4.8	5.7 5.1 13	8.4 5.5
≥ 400	9.2 4.9 76	12.9 4.7	8.9 3.8 20	13.6 4.1	9.4 5.2 48	12.8 5.0	9.0 5.5 7	12.0 4.2	5.4 5.4 76	6.4 4.5	5.9 6.2 20	7.2 5.3	5.1 5.2 48	6.0 3.9	5.9 4.9 7	7.2 5.0
Whole Sample	6.4 3.9 683	17.9 9.3	8.9 5.6 60	13.9 5.1	7.3 4.0 222	16.2 8.0	5.6 3.2 401	19.5 10.1	2.8 3.6 683	5.8 5.1	4.7 5.4 60	6.2 4.7	3.5 3.9 222	5.9 4.8	2.1 2.8 401	
Correlation Coefficient	.41**	-.36**	.01	-.07	.38**	-.40**	.35**	-.30**	.38**	.09**	.09	.09	.32**	.06	.39**	.13**
Slope	.01**	-.02**	.00	-.00	.01**	-.02**	.01**	-.03**	.01*	.002*	.00	.00	.01**	.00	.01**	.01*
evidence of Curvilinearity	yes*	yes**[c]	no	no	no	yes**[c]	no	yes*[c]	yes*	no	no	no	no	no	no	no

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated vocational credits.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 5 (continued)

Decomposition of the Vocational Curriculum into Subject Offerings by Schools Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	MECHANICAL TRADES								CONSTRUCTION TRADES							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	0.4 0.6 72	1.8 3.0					0.4 0.6 72	1.8 3.0	2.4 2.7 72	13.0 13.7					2.4 2.7 72	13.0 13.7
25-49	1.0 1.7 95	3.7 5.1			2.3 2.9 18	4.4 5.6	0.7 1.1 77	3.6 4.9	3.3 3.5 95	12.9 9.4			5.5 6.7 18	11.0 12.8	2.8 1.8 77	13.4 8.4
50-99	1.6 2.5 134	4.0 4.4			0.9 1.1 30	3.0 3.2	1.8 2.8 103	4.3 4.7	3.9 4.6 134	10.3 8.1			3.1 2.7 30	10.7 7.8	4.1 5.0 103	10.1 8.2
100-199	3.2 4.2 147	6.8 6.5	0.8 1.4 3	1.3 2.1	3.1 5.6 45	4.6 4.7	3.3 3.4 99	8.0 6.9	8.3 8.2 147	18.5 9.1	9.2 6.4 3	20.6 7.0	10.5 11.1 45	21.7 10.1	7.3 6.2 99	16.9 8.3
200-299	4.4 6.5 93	6.4 5.8	6.5 9.6 19	8.1 7.3	3.5 3.2 45	6.0 4.4	4.4 7.5 29	5.8 6.3	10.2 8.4 93	17.5 7.6	12.1 12.3 19	17.3 8.5	9.9 7.1 45	17.9 7.1	9.6 6.9 29	17.1 7.8
300-399	6.5 7.8 66	7.8 6.4	7.8 10.4 18	8.1 6.4	6.4 6.8 36	7.9 6.7	5.3 5.5 13	6.9 5.1	14.3 9.8 66	20.1 7.7	15.2 12.4 18	19.4 6.3	14.5 9.0 36	21.3 8.6	12.3 7.7 13	17.9 6.4
≥ 400	6.6 6.7 76	7.8 5.1	5.5 6.0 20	6.9 4.3	7.1 7.3 48	8.2 5.4	5.9 4.2 7	7.8 4.8	14.2 9.6 76	18.7 7.0	12.5 8.3 20	17.8 8.2	15.1 10.3 48	19.3 6.6	12.6 6.8 7	17.3 5.8
Whole Sample	3.2 5.2 683	5.4 5.7	6.2 8.7 60	7.3 6.2	4.2 5.7 222	6.0 5.4	2.1 3.6 401	4.9 5.7	7.6 8.3 683	15.6 9.7	13.0 11.0 60	18.3 7.8	10.6 9.6 222	18.0 9.5	5.2 5.7 401	13.8 9.8
Correlation Coefficient	.39**	.27**	-.03	-.03	.37**	.30**	.41**	.26**	.48**	.25**	-.02	-.04	.38**	.19**	.49**	.18**
Slope	.01**	.01**	-.00	-.00	.01**	.01**	.02**	.02**	.02**	.01**	-.001	-.002	.02**	.01**	.03**	.02**
Evidence of Curvilinearity	yes**	yes**	no	no	no	no	yes**	yes**	yes**	yes**	no	no	no	yes**	yes*	no

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated vocational credit.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 5 (continued)

Decomposition of the Vocational Curriculum into Subject Offerings by Schools Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	PERSONAL SERVICES								OTHER VOCATIONAL							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	0.0 0.0 72	0.0 0.0					0.0 0.0 72	0.0 0.0	1.8 1.6 72	11.7 11.7					1.8 1.6 72	11.7 11.7
25-49	0.0 0.0 95	0.0 0.0			0.0 0.0 18	0.0 0.0	0.0 0.0 77	0.0 0.0	3.2 2.2 95	14.9 9.7			3.9 2.2 18	14.6 6.8	3.1 2.2 77	14.9 10.2
50-99	0.2 0.7 134	0.4 1.3			0.2 0.4 30	0.6 1.3	0.2 0.8 103	0.3 1.3	5.4 5.3 134	16.7 11.1			4.5 3.3 30	18.1 11.1 103	5.7 5.7	16.3 11.1
100-199	0.7 1.7 147	1.1 2.5	0.3 1.3 3	0.3 1.1	0.9 2.1 45	1.1 2.3	0.6 1.6 99	1.2 2.6	6.3 4.8 147	15.6 10.5	6.7 5.1 3	16.1 6.4	6.2 5.7 45	14.3 10.5	6.4 4.4 99	16.1 10.7
200-299	0.8 1.8 93	1.0 2.2	1.1 2.2 19	1.2 2.5	0.9 1.8 45	1.2 2.4	0.6 1.6 29	0.6 1.5	10.5 8.3 93	19.4 11.3	11.3 6.2 19	22.1 14.0	9.9 8.4 45	18.8 10.7	10.9 9.3 29	18.6 10.4
300-399	0.8 1.6 66	0.9 1.7	1.2 2.0 18	1.1 1.8	0.8 1.5 36	1.0 1.7	0.4 1.0 13	0.5 1.2	14.3 9.4 66	21.4 10.3	15.7 9.5 18	22.0 9.6	14.3 10.6 36	21.6 11.4	12.4 5.4 13	20.6 8.6
≥ 400	1.1 2.1 76	1.3 2.8	0.4 0.9 20	0.5 1.0	1.3 2.3 48	1.6 3.2	1.0 2.3 7	1.1 2.6	17.4 11.8 76	23.7 10.0	17.0 10.9 20	24.6 10.9	18.0 12.8 48	23.7 10.0	14.9 7.6 7	21.4 8.4
Whole Sample	0.5 1.4 683	0.7 1.9	0.8 1.8 60	0.9 1.8	0.8 1.8 222	1.0 2.3	0.3 1.1 401	0.5 1.6	7.8 8.3 683	17.3 11.2	14.2 9.3 60	22.4 11.4	10.4 10.1 222	19.0 10.9	5.4 5.6 401	
Correlation Coefficient	.25**	.19**	-.12	-.12	.22**	.15*	.23**	.19**	.59**	.30**	.21*	.15	.55**	.30**	.52**	.19**
Slope	.002**	.002**	-.001	-.001	.002**	.002*	.003**	.003**	.03**	.02**	.01	.01	.03**	.02**	.03**	.02**
Evidence of Curvilinearity	yes*	yes**	no	no	no	no	no	yes*	yes*	no	no	no	no	no	yes**	no

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated vocational credits.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 7

Decomposition of Selected Academic Subjects into Advanced and Remedial Offerings, By School Size and Rural Status

(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	ADVANCED ENGLISH								REMEDIAL ENGLISH							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	0.0 0.0 72	0.0 0.0					0.0 0.0 72	0.0 0.0	0.8 1.5 72	9.0 17.2					0.8 1.5 72	9.0 17.2
25-49	0.0 0.0 95	0.0 0.0			0.0 0.0 18	0.0 0.0	0.0 0.0 77	0.0 0.0	0.4 0.8 95	4.2 9.0			0.0 0.0 18	0.0 0.0	0.4 0.8 77	5.1 9.8
50-99	0.2 0.6 134	3.7 8.8			0.3 0.7 30	5.1 10.7	0.2 0.6 103	3.3 8.2	0.4 1.0 134	4.4 8.9			0.1 0.3 30	1.3 3.4	0.5 1.1 103	5.3 9.8
100-199	1.4 1.8 147	13.4 15.7	2.1 1.3 3	22.2 10.8	2.0 2.1 45	19.5 18.7	1.1 1.6 99	10.3 13.3	1.0 1.6 147	8.4 12.0	0.1 0.8 3	1.4 7.3	1.2 1.5 45	10.9 13.3	0.9 1.6 99	7.5 11.4
200-299	1.5 1.8 93	12.0 15.0	1.7 2.3 19	11.8 13.8	1.6 1.8 45	14.2 16.3	1.0 1.5 29	8.9 13.7	1.4 1.9 93	10.4 12.9	1.6 2.3 19	11.0 14.7	1.5 1.9 45	12.2 13.8	1.0 1.4 29	7.4 10.0
300-399	1.8 1.7 66	13.9 12.1	2.0 1.6 18	14.5 11.2	1.8 1.7 36	14.3 13.1	1.4 1.6 13	11.7 11.1	1.5 1.9 66	10.2 12.6	1.7 2.3 18	9.4 11.6	1.4 1.8 36	10.3 12.9	1.4 1.8 13	11.0 14.1
≥ 400	2.0 1.9 76	12.2 10.5	2.0 1.8 20	13.3 10.1	1.9 1.9 48	11.6 10.6	2.0 2.0 7	13.0 12.3	1.8 2.1 76	10.3 11.5	1.7 2.1 20	10.5 13.9	1.8 2.1 48	10.3 10.9	1.6 1.7 7	9.1 9.1
Whole Sample	0.9 1.6 683	7.9 12.6	1.9 1.9 60	13.7 11.7	1.5 1.8 222	12.3 14.8	0.5 1.1 401	4.6 10.0	1.0 1.6 683	7.7 12.2	1.6 2.2 60	9.8 13.1	1.2 1.8 222	8.8 12.0	0.7 1.4 401	6.9 12.0
Correlation Coefficient	.42**	.31**	.04	-.04	.25**	.08	.42**	.37**	.28**	.15**	.06	.045	.32**	.20**	.17**	.06
Slope	.004**	.02**	.000	-.00	.003**	.01	.005**	.04**	.003**	.01**	.001	.00	.003**	.01**	.002**	.01
Evidence of Curvilinearity	yes**	yes**	no	no	no	yes*	yes**	yes**	no	no	no	no	no	yes**	no	no

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated credits in the indicated subject area.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 7 (continued)

Decomposition of Selected Academic Subjects into Advanced and Remedial Offerings, By School Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	ADVANCED MATHEMATICS								REMEDIAL MATHEMATICS							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	0.3 0.4 72	4.8 8.1					0.3 0.4 72	4.8 8.1	0.6 0.7 72	9.6 11.5					0.6 0.7 72	9.6 11.5
25-49	0.1 0.3 95	1.8 4.9			0.0 0.0 18	0.0 0.0	0.1 0.3 77	2.2 5.4	0.8 0.6 95	13.8 10.3			0.4 0.5 18	8.5 9.9	0.8 0.6 77	15.0 10.1
50-99	0.2 0.4 134	2.3 4.7			0.4 0.5 30	5.1 6.5	0.1 0.3 103	1.4 3.6	1.3 1.2 134	17.9 15.6			0.5 0.8 30	7.9 11.8	1.5 1.2 103	20.8 15.4
100-199	0.9 1.0 147	8.9 9.3	1.1 2.1 3	5.3 9.9	1.1 1.1 45	9.8 9.4	0.8 0.9 99	8.6 9.2	1.7 1.5 147	18.5 11.7	1.5 1.4 3	12.9 13.4	1.5 1.2 45	16.0 10.8	1.8 1.3 99	19.9 11.9
200-299	1.3 1.2 93	9.7 8.2	1.3 1.2 19	9.5 7.5	1.3 1.3 45	9.3 7.9	1.1 1.0 29	10.3 9.2	2.9 2.0 93	23.6 13.4	3.4 2.1 19	26.0 13.0	2.9 2.1 45	22.9 13.5	2.6 1.8 29	23.1 13.8
300-399	1.7 1.3 66	13.2 8.9	1.9 1.4 18	13.7 8.2	1.7 1.3 36	13.3 9.2	1.3 1.1 13	11.9 9.4	2.7 1.8 66	21.0 11.5	2.8 1.6 18	20.8 10.2	3.0 2.0 36	22.1 11.2	1.9 1.5 13	18.0 14.2
≥ 400	2.1 1.5 76	14.9 8.3	2.0 1.4 20	13.8 8.2	2.2 1.6 48	15.4 8.0	1.9 1.6 7	14.7 11.0	2.8 1.9 76	19.9 10.5	2.8 1.8 20	20.5 10.8	2.9 2.0 48	19.5 10.3	2.9 2.2 7	20.6 12.4
Whole Sample	0.8 1.2 683	7.4 8.8	1.7 1.4 60	11.9 8.3	1.3 1.4 222	10.1 9.1	0.5 0.8 401	5.2 8.1	1.8 1.7 683	17.9 13.0	2.9 1.9 60	21.9 11.7	2.1 1.9 222	17.4 12.5	1.4 1.3 401	17.5 13.4
Correlation Coefficient	.58**	.47**	.21	.25*	.51**	.43**	.51**	.39**	.45**	.18**	-.02	-.06	.43**	.27**	.39**	.17**
Slope	.004**	.03**	.002	.01	.004**	.02**	.004**	.03**	.005**	.01**	-.000	-.00	.005**	.02**	.005**	.02**
Evidence of Curvilinearity	yes**	yes**	no	no	no	yes*	no	no	yes**	yes**	no	no	yes**	yes**	yes**	yes**

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated credits in the indicated subject area.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 7 (continued)

Decomposition of Selected Academic Subjects into Advanced and Remedial Offerings, By School Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	ADVANCED SCIENCE								REMEDIAL SCIENCE							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	0.2 0.4 72	5.0 10.8					0.2 0.4 72	5.0 10.8	0.6 1.0 72	16.0 22.7					0.6 1.0 72	16.0 22.7
25-49	0.2 0.4 95	3.3 7.2			0.0 0.0 18	0.0 0.0	0.2 0.4 77	4.0 7.8	0.4 0.6 95	10.7 16.0			0.8 0.4 18	20.0 11.2	0.3 0.6 77	8.6 16.3
50-99	0.7 1.0 134	11.9 14.8			0.5 0.7 30	8.8 11.3	0.8 1.1 103	12.8 15.6	1.0 0.9 134	20.7 19.5			0.7 0.8 30	14.7 15.0	1.1 0.9 103	22.4 20.4
100-199	0.9 1.0 147	13.0 13.1	1.5 1.1 3	23.7 10.8	1.0 1.1 45	13.5 13.0	0.8 0.9 99	12.4 13.1	1.0 1.0 147	16.5 15.1	1.0 1.0 3	15.0 17.6	1.0 1.0 45	14.7 12.9	1.0 1.0 99	17.3 16.0
200-299	1.6 1.4 93	18.5 15.1	1.4 1.2 19	16.9 12.8	1.5 1.5 45	17.6 16.1	1.7 1.4 29	21.1 15.0	1.3 1.3 93	16.3 15.5	1.1 1.2 19	12.8 14.9	1.3 1.5 45	16.2 15.8	1.3 1.0 29	18.7 15.3
300-399	1.9 1.4 66	20.6 12.2	1.8 1.4 18	19.3 12.7	2.1 1.4 36	20.7 12.5	1.8 1.2 13	22.1 11.4	1.4 1.2 66	15.7 12.5	1.2 1.0 18	14.5 10.6	1.5 1.4 36	15.9 12.7	1.2 1.0 13	16.9 15.0
≥ 400	2.5 1.8 76	23.0 12.3	2.3 1.8 20	23.4 14.9	2.5 1.9 48	22.3 11.8	2.7 1.7 7	25.8 9.1	1.5 1.2 76	15.3 11.7	1.4 1.2 20	14.8 11.7	1.6 1.2 48	16.1 12.1	1.2 1.2 7	11.7 10.0
Whole Sample	1.1 1.3 683	13.2 14.2	1.8 1.5 60	20.2 13.4	1.5 1.6 222	15.7 14.1	0.7 1.0 401	10.7 13.8	1.0 1.1 683	16.2 16.8	1.3 1.1 60	14.1 12.5	1.2 1.2 222	15.9 13.5	0.8 1.0 401	16.7 18.9
Correlation Coefficient	.55**	.41**	.26*	.15	.51**	.40**	.50**	.38**	.29**	-.01	.18	.10	.25**	-.02	.24**	.03
Slope	.004**	.04**	.003*	.01	.005**	.03**	.005**	.05**	.002**	-.001	.001	.008	.002**	-.001	.002**	.006
Evidence of Curvilinearity	yes**	yes**	no	no	no	yes**	no	yes*	yes**	no	no	no	no	no	yes*	no

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated credits in the indicated subject area.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 7 (continued)

Decomposition of Selected Academic Subjects into Advanced and Remedial Offerings, By School Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

Graduating Class Size	ADVANCED SOCIAL STUDIES								REMEDIAL SOCIAL STUDIES							
	Whole Sample		Urban		Suburban		Rural		Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%	#	%	#	%	#	%	#	%
< 25	0.0 0.0 72	0.0 0.0					0.0 0.0 72	0.0 0.0	0.1 0.2 72	2.1 4.4					0.1 0.2 72	2.1 4.4
25-49	0.2 0.7 95	1.3 5.2			1.0 1.5 18	7.1 10.4	0.0 0.0 77	0.0 0.0	0.0 0.1 95	0.5 2.1			0.0 0.0 18	0.0 0.0	0.0 0.1 77	0.6 2.3
50-99	0.1 0.3 134	2.1 8.0			0.0 0.0 30	0.0 0.0	0.1 0.3 103	2.7 9.1	0.3 0.4 134	6.0 8.1			0.2 0.4 30	3.1 5.9	0.4 0.5 103	6.8 8.4
100-199	0.4 0.9 147	5.5 11.4	1.3 1.1 3	16.7 16.6	0.2 0.5 45	2.2 5.7	0.5 1.0 99	6.6 12.8	0.4 0.5 3	6.5 8.1	0.4 0.3 45	11.0 12.0	0.4 0.5 99	6.3 8.4	0.4 0.5	6.4 7.8
200-299	0.6 0.9 93	6.3 9.2	0.4 0.8 19	4.4 7.6	0.6 1.0 45	6.8 9.1	0.5 0.9 29	6.7 10.2	0.5 0.5 93	6.3 6.7	0.4 0.5 19	5.8 8.3	0.5 0.5 45	6.7 6.9	0.5 0.6 29	6.1 5.6
300-399	0.8 1.0 66	10.3 11.7	0.9 1.2 18	9.8 11.2	0.9 1.0 36	11.8 12.7	0.4 0.6 13	7.0 9.4	0.6 0.7 66	7.0 7.0	0.6 0.8 18	6.4 7.0	0.6 0.6 36	7.0 6.7	0.4 0.5 13	7.9 8.4
≥ 400	1.0 1.1 76	9.9 10.5	0.9 1.1 20	9.4 10.4	1.0 1.1 48	10.5 10.9	0.7 0.8 7	7.2 8.6	0.6 0.7 76	6.2 6.6	0.5 0.8 20	5.1 5.9	0.7 0.7 48	6.8 7.0	0.6 0.7 7	5.3 5.6
Whole Sample	0.4 0.8 683	4.7 9.6	0.8 1.1 60	8.4 10.4	0.6 1.0 222	6.6 10.0	0.2 0.6 401	3.2 9.0	0.4 0.5 683	5.1 7.1	0.5 0.7 60	6.0 7.3	0.4 0.6 222	5.7 7.1	0.3 0.5 401	4.6 7.0
Correlation Coefficient	.37**	.33**	.15	.13	.29**	.32**	.30**	.28**	.31**	.18**	.12	-.07	.30**	.18**	.30**	.21**
Slope	.002**	.02**	.001	.01	.002**	.02**	.002**	.03**	.001**	.01**	.001	-.00	.001**	.01**	.001**	.02**
Evidence of Curvilinearity	no	yes**	no	no	no	no	yes**	yes**	yes**	yes**	no	no	no	no	yes**	yes**

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated credits in the indicated subject area.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

Table 7 (continued)

Decomposition of Selected Academic Subjects into Advanced and Remedial Offerings, By School Size and Rural Status
(cells contain group mean, standard deviation, and sample size)

ADVANCED FOREIGN LANGUAGES

Graduating Class Size	Whole Sample		Urban		Suburban		Rural	
	#[a]	%[b]	#	%	#	%	#	%
< 25	0.0 0.0 72	0.0 0.0					0.0 0.0 72	0.0 0.0
25-49	0.0 0.0 95	0.0 0.0			0.0 0.0 18	0.0 0.0	0.0 0.0 77	0.0 0.0
50-99	0.0 0.1 134	0.3 2.4			0.0 0.0 30	0.0 0.0	0.0 0.2 103	0.4 2.7
100-199	0.1 0.3 147	0.7 2.9	0.3 0.6 3	3.6 6.5	0.2 0.4 45	1.4 4.5	0.0 0.2 99	0.2 1.5
200-299	0.4 0.9 93	2.8 6.0	0.4 1.0 19	2.2 5.0	0.5 1.0 45	3.5 6.4	0.3 0.8 29	2.2 6.0
300-399	0.8 1.7 66	4.6 7.7	1.0 1.3 18	6.1 8.1	1.0 2.0 36	5.2 8.4	0.1 0.3 13	0.9 2.7
≥ 400	1.2 1.7 76	6.1 7.4	1.3 1.4 20	7.3 7.3	1.2 1.9 48	6.1 7.6	0.6 1.1 7	3.5 6.3
Whole Sample	0.3 0.9 683	1.7 4.9	0.9 1.3 60	5.1 7.1	0.6 1.4 222	3.2 6.4	0.0 0.3 401	0.4 2.5
Correlation Coefficient	.44**	.42**	.27*	.23*	.38**	.35**	.31**	.24**
Slope	.003**	.01**	.002*	.01	.003**	.01**	.001**	.01**
Evidence of Curvilinearity	yes*	no	no	no	no	no	yes*[c]	no

[a] Number of unduplicated credits.
[b] Percent of the total number of unduplicated credits in the indicated subject area.
[c] U-shaped.
* = $p < .05$
** = $p < .01$

END

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